City of West University Place
Harris County, Texas

ORDINANCE NO. 1996

AN ORDINANCE FINDING AND DETERMINING THAT THE WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN FOR THE CITY OF WEST UNIVERSITY PLACE, TEXAS, A COPY OF WHICH IS ATTACHED HERETO AND MARKED EXHIBIT "A", HAS BEEN PREPARED IN ACCORDANCE WITH ALL APPLICABLE LAWS, RULES, REGULATIONS, STANDARDS AND GUIDELINES PROMULGATED BY APPROPRIATE AUTHORITY, AND FURTHER, THAT SUCH PLAN IS ADEQUATE TO PROVIDE AN EFFECTIVE MEANS FOR WATER CONSERVATION AND DROUGHT CONTINGENCY WITHIN THE CITY LIMITS OF THE CITY OF WEST UNIVERSITY PLACE, ADOPTING THE SAME AS THE OFFICIAL WATER CONSERVATION AND DROUGHT CONTINGENCY PLAN FOR THE CITY OF WEST UNIVERSITY PLACE, TEXAS, AND REQUIRING ADHERENCE TO ALL REQUIREMENTS, CONDITIONS AND PROCEDURES SPECIFIED THEREBY.

WHEREAS, heretofore previously, the City of West University Place has undertaken such studies and surveys as were necessary to determine appropriate facts upon which to base and develop a Water Conservation and Drought Contingency plan for the City of West University Place; and

WHEREAS, as a result of such preliminary work, a Water Conservation and Drought Contingency plan has been prepared, which fairly represents a sound policy for the City of West University Place;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF WEST UNIVERSITY PLACE, TEXAS:

1. That the City Council of the City of West University Place hereby finds and determines that the Water Conservation and Drought Contingency plan, a copy of which is attached hereto and marked Exhibit "A", has been prepared in accordance with all applicable laws, rules, regulations, standards and guidelines promulgated by appropriate authority.
2. That the City Council of the City of West University Place further finds and determines that the said Water Conservation and Drought Contingency plan is adequate to provide an effective means for water conservation and drought management within the city limits of the City of West University Place.
3. That the Water Conservation and Drought Contingency plan, a copy of which is attached hereto and marked Exhibit "A", is hereby adopted as the official Water Conservation and Drought Contingency Plan for the City of West University Place, Texas.
4. Further, that all of the requirements, conditions and procedures specified in the attached Water Conservation and Drought Contingency Plan for the City of West University Place shall be adhered to by all persons affected thereby, including but not limited to all residents, citizens and inhabitants of the City of West University Place.
5. Penalty. Any person, firm, partnership, association, corporation, company, or organization of any kind who or which intentionally, knowingly, recklessly, or with criminal negligence violates any of the provisions of this Ordinance shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined in an amount not to exceed $500 per day. Each day during which such violation shall exist or occur shall constitute a separate offense. The owner or owners of any property or

premises and any agent, contractor, builder, architect, person, or corporation who shall assist in the commission of such offense shall be guilty of a separate offense, and upon conviction thereof, shall be punished as above provided.

6. Severability. In the event any section, paragraph, subdivision, clause, phrase, provision, sentence, or part of this Ordinance or the application of the same to any person or circumstances shall for any reason be adjudged invalid or held unconstitutional by a court of competent jurisdiction, it shall not affect, impair, or invalidate this Ordinance as a whole or any part or provision hereof other than the part declared to be invalid or unconstitutional; and the City Council of the City of West University Place, Texas, declares that it would have passed each and every part of the same notwithstanding the omission of any such part thus declared to be invalid or unconstitutional, or whether there be one or more parts.
7. Repealer. All ordinances or parts of ordinances inconsistent or in conflict herewith are, to the extent of such inconsistency or conflict, hereby repealed.

PASSED and APPROVED this, the 27th day of October 2014.

Mayor, City of West University Place, Texas

ATTEST:

City Secretary Thelma A. Lenz

Recommended by:

City Manager Michael G. Ross

Approved as to Form:

City Attorney Alan Petrov

WATER CONSERVATION
And
DROUGHT CONTINGENCY PLAN

CITY OF WEST UNIVERSITY PLACE TEXAS

2014

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INTRODUCTION

For many years the citizens and elected officials in the State of Texas have battled drought. During the 75th legislature Senate Bill 1 (SB 1) was propagated, this legislation required Regional Water Planning Groups to develop water plans to be incorporated into a State Water Plan. The goal to "... provide for the orderly development, management, and conservation of water resources and preparation for and response to drought conditions, in order that sufficient water will be available at a reasonable cost to ensure public health, safety, and welfare: further economic development: and protect the agricultural and natural resources of the entire state." As part of the Regional and State Water Plans, all communities were required to develop Water Conservation and Drought Contingency Plans. These plans must be reviewed and amended every 5 years

The City of West University Place has prepared this updated Water Conservation and Drought Contingency Plan. This updated plan includes elements required by the regulation promulgated by the Texas Commission on Environmental Quality and the Texas Water Development Board.

The City of West University Place owns and operates a water production and distribution system including production, storage and distribution facilities and equipment. Additionally the City owns and operates a wastewater collection and treatment systems. These systems are permitted and regulated by the Texas Commission on Environmental Quality. These systems are operated by personnel licensed by the Texas Commission on Environmental Quality.

The system serves an area of approximately two square miles. All properties within the City limits use the water and wastewater systems. The customer base in the City consists of Single Family Residential, Commercial and Institutional users. The institutional users consist of one elementary school and several churches; for accounting purposes these have always been listed in our billing system as commercial and are so reflected in the Utility Profile section below. All users including municipal use are metered. Municipal Uses are shown under Residential. Future accounting will separate the users into more defined classifications.

UTILITY PROFILE

The City of West University Place owns and operates the system which serves the residents and businesses located within its boundaries. This includes two water wells and the purchase of treated surface water from the City of Houston. West University Place also owns and operates a wastewater collection and treatment system. All residents and commercial properties within the boundaries of the city utilize the city's wastewater system for sewerage disposal.

Drinking Water System Facilities

- 2 storage and pump stations
- 2 water wells
- 6 Distribution Booster Pumps
- 4 ground storage tanks
- 2 elevated water storage tanks
- 2 Treated Surface Water intake points (City of Houston Surface Water)
- 41 miles of distribution piping

Drinking Water System Capacity

Drinking Water Production/Procurement

- Well Water – 3000 Gallons per Minute
- Surface Water – 3000 Gallons per Minute

Distribution

- Booster Capacity – 9,500 Gallons per Minute

Drinking Water Storage

- Ground Storage – 2,900,000 Gallons
- Elevated Storage – 750,000 Gallons (Water Towers)

Customer Data

Population

- Current population is approximately 14,800, the numbers are from the 2000 and 2010 Census. The area within the city's boundaries has been set for many years by the existence of other municipal government boundaries in each direction of the compass. The strict zoning regulations within the city prevent the creation of multi-family residential areas thereby limiting the potential for population growth. The city projects that the population will remain stable in the foreseeable future.
- The city's water system has approximately 6,100 water meters of which approximately 450 serve irrigation only meters at locations with either domestic or commercial use meters in place.

WATER USE DATA FOR SERVICE AREA

Water Production/Consumption

YEAR	Water Produced	Water Billed / Metered	Unmetered
2013	842,313,000 gallons	815,880,000 gallons	3.14%
2012	865,293,000 gallons	820,541,000 gallons	5.17%
2011	1,018,346,000 gallons	914,169,000 gallons	10.23%

Wastewater System

- 12 Sanitary Sewer Pump Stations collect water from around the city and pump or relay the wastewater to the wastewater treatment plant.
- Approximately 44 miles of sanitary sewer pipe with 1021 manholes.
- Approximately 5600 connections to residential and commercial customers.
- One Wastewater Treatment Plant, rated at 2.0 Million gallons per day. With a peak flow of 6 million gallons per day.

Wastewater System Data

Wastewater Treated Flow

YEAR	Sewer Treated	Percent of Water Produced
2013	403,745,000 gallons	47.9%
2012	435,698,000 gallons	50.4%
2011	402,358,000 gallons	39.5%

The Wastewater system data indicates that a large percentage of water does not go through the wastewater treatment plant. This indicates that there is substantial area for conservation in the outdoor usages. This is supported by the low water loss numbers in recent years.

WATER CONSERVATION PLAN

INTRODUCTION

The City of West University Place has demonstrated a high level of concern for the protection of the Environment through previous Water Conservation Plans, Storm Water Management Plans and our Urban Forest Protection ordinance. The City continues to exercise diligence in the protection of the environment with the issuance of this revised Water Conservation/Drought Contingency Plan.

GOALS

The City has established goals for the measurement of the effectiveness of this water conservation plan. The goals are in two areas water loss reduction and municipal use of water.

- In 2013 the City sold 815,880,000 gallons of water and produced 842,313,000gallons of water. The resulting amount of lost water came to 5 gpcd (gallons per capita per day). This is equivalent to approximately 3.2% of the water produced not being sold. This amount includes water from maintenance activities including fire hydrant testing, water main flushing, water storage tank maintenance, water not measured by faulty water meters and water leaks.
- The City has established a five year goal to be achieved by the end of 2019 a water loss not to exceed 3 gpcd and a 10 year goal to be achieved by the end of 2024 a water loss not to exceed 2.5 gpcd.
- With the annual sales of 815,880,000 the water consumption was 151 gpcd. Through the use of water conservation education, a water conservative water rate and provision of tools to assist the community with water conservation efforts that the City will establish annual sales reflective of 145 gpcd 5 year goal to be achieved by the end of 2019 and 140 gpcd 10 year goal to be achieved by the end of 2024.

CONSERVATION METHODS AND SCHEDULE

The city shall perform the following task in an effort to meet the established goals.

- June 30, 2015 – Complete and initiate the development of program to effectively monitor and audit production and consumption on a monthly basis with annual reports which clearly show the effectiveness of the program. This shall include the automatic tracking of water production and consumption through the use of an automated metering infrastructure which will allow for water production and consumption to be compared daily. This includes Master Meters for production and distribution and new radio read meters on every water end use point.
- September 30, 2015 – Complete and initiate a meter monitoring and testing program which includes the electronic monitoring of water meters for meter failures. Weekly reports of such failures and a program to repair or replace faulty meters within 7 days of the report being generated. A program to test meters of differing consumption volumes to determine that the meters remain accurate and to initiate a replacement program for any meter not measuring over 95% of the flow at any flow

rate. The meter testing will be designed based on AWWA Water Meter Testing Standards.

- March 30, 2015 – The City has initiated an automated meter reading system and we anticipate completion of the installation in March of 2015. The meters have a warranty for accuracy and functionality for 20 years. The City as mentioned above will monitor functionality with the electronic radio read metering system and shall test meter annually in a variety of consumption ranges to verify that they are accurate. The City shall incorporate into the capital planning program for the replacement of these meters in approximately 20 years and sooner if they are not effective.
- May 31, 2014 – Continue program to reduce water losses with regular visual inspections along the route of water mains with extra attention to mains not located within residential areas where they are most likely to be reported quickly. It is the policy of the Public Works operations Division to repair any leak which appears to exceed 10 gallons per minute within 24 hours and any other leak within 96 hours. Additionally the audit mentioned above is intended to identify any water loss and will result in the inspection of storm and sanitary sewers to look for excess flow anytime a water loss is found to be excessive.
- January 31, 2016 – Investigate the addition of electronic leak detection devices to report over the radio meter reading network to assist in the detection of leaks with emphasis on listening devices on the older cast iron and ductile iron water mains.
- Mar 30, 2015 – Continue the distribution of water conservation education materials
  - Current – Publish articles at least twice each year in the City Currents, a quarterly newsletter published by the City and distributed to all residents and businesses within the City. This includes all customers of the water system.
  - Current – Maintain a copy of the Utility Profile updated annually on the City's internet site.
  - Current – Maintain a page on the City's internet site with a copy of the water conservation plan and tips on water conservation.
  - Current – Participate in the regional Harris Galveston Subsidence Districts Regional Water Conservation Education Program. During 2013 this participation included the sponsoring of 3000 elementary school students in the Water Wise Water Conservation Education Program. This participation is established in the city's budget annually and should always include a minimum of the students enrolled in the West University Elementary School.
- March 30, 2015 – Initiate a consumer internet portal where consumers can view their own water consumption in near real time. This consumption will be displayed in hourly increments and the portal will include charts, graphs and links to tips on water conservation.
- June 30, 2015 – Create and hold customer seminars to provide instruction on the use of the consumer portal and how to determine what the water usage graphs indicate. How to recognize water leaks and how to determine the amount of water being used by automatic lawn irrigation systems.
- July 31, 2015 – Initiate a program to notify consumers when a trend develops on their water use history that indicates a possible water leak, This notice to be made by email or telephone if available. If necessary city staff will visit the property with possible water leak and advise the consumer or leave a door hanger with information.

- March 30, 2016 – Initiate a program to notify consumers with the highest consumption of the availability of assistance from city staff to audit water usages with the consumer and provide advice on reducing the consumption levels.
- June 30, 2015 – Continue to annually review the water rates and water rate structure to maintain sufficient income to support the ongoing maintenance and improvements to the Water System while insuring that the rate is not promoting the inefficient use of water. The city currently has an increasing block structure which meets this standard.
  - Base cost is based on the size of the water service for residential and commercial customers.
  - Water usage billed for increasing water usages for the first 3000 gallons and then increasing rates for water used in every 6000 gallon increments up to 15,000 gallons and a flat rate per thousand for every thousand gallon increment above 15,000 gallons.

IMPLEMENTATION/ENFORCEMENT

The City of West University Place municipal government is based on a Home Rule Charter operating in the City Manager / Council format. The city has the legal authority to create ordinances and to enforce them with civil or criminal penalties.

The City maintains a full time Police Department and a full time Code Enforcement Officer. These shall be responsible for enforcement of the plan where it calls for penalties for violations.

The City shall pass an ordinance to adopt this Water Conservation / Drought Contingency Plan and cause that ordinance to become part of the Code of Ordinances for the City of West University Place.

The Public Works Department will oversee and continue the initiation of the Water Conservation Plan and the documentation and reporting required for the plan. This includes the creation and submission of the Annual Report to the Texas Commission on Environmental Quality and

Any violation of the mandatory provisions of the Drought Contingency Plan may result in a penalty and/or interruption of water service. The City Manager is empowered to enforce the mandatory provisions and may interrupt water service based upon repeated violations. Penalties shall be paid before water service is restored. Violations will be reported by all City personnel to the City Manager.

Variances to the Mandatory restrictions may be granted by action of the City Council, and shall be requested in writing of a letter to the City Manager delivered by certified mail, or hand delivered with a written letter of receipt to be signed by an appropriately designated city employee and must be received no later than the close of business on the Thursday immediately preceding the Monday of the City Council Meeting at which the request will be heard and acted upon by City Council Action. This time frame will allow for the action to be posted on the City Council Meeting Agenda as required by law. The City Manager or his delegate shall allow for request having the potential for

immediate human health effects to be granted on a temporary basis pending action by the City Council.

DROUGHT CONTINGENCY PLAN

Section 1 - Declaration of Policy, Purpose, and Intent

In cases of extreme drought, periods of abnormally high usage, system contamination, or extended reduction in ability to supply water due to equipment failure, temporary restrictions will be instituted to limit non-essential water usage. The purpose of the Drought Contingency Plan is to encourage, and under emergency conditions require, customer conservation in order to maintain supply, storage, or pressure.

Section 2 - Public Involvement

Opportunity for the public to provide input into the preparation of the Plan was provided by posting of Notice of Council Meeting to approve ordinance adopting Drought Contingency Plan.
The meetings took place at:
Date: October 13, 2014 and October 2, 2014
Time: 6:30 PM
Place: 3800 University Blvd, West University Place Texas, Municipal Building, Council Chambers

Section 3 - Public Education

The City of West University Place will periodically provide the public with information about the Plan, including information about the conditions under which each stage of the Plan is to be initiated or terminated and the drought response measures to be implemented in each stage. Drought plan information will be provided by press release and utility bill notice advising of availability of plan on internet web site or from Utility Billing Office.

Section 4 - Coordination with Regional Water Planning Groups

The service area of the City of West University Place is located within Regional Water Planning Group H and a copy of this plan has been mailed to this planning group.

Section 8 - System Supply Strategy

The City of West University Place water system is supplied with a combination of well water and surface water. The well water is supplied by water wells owned and operated by the system and can safely supply our annual daily average. The Surface water supply is through a purchase agreement with the City of Houston, Texas and this supply can safely supply our daily annual average. With limitations on either of these supplies during peak pumping seasons it may be necessary to implement water usage restrictions. The City of West University Place has two pump stations either of which can pump well water, surface water or a combination of both. Either pump Station can safely supply the daily average flow but may require usage restrictions in the event of equipment outages during peak water pumping seasons.

Section 9 - Response Stages

The City will communicate Stage I concepts each year. If, supply or demand triggers are met the city will initiate the appropriate elevated Stage of restrictions. The City shall notify the Texas Commission on Environmental Quality any time Stage II , Stage III or Stage IV are initiated.

STAGE I – ANNUAL DROUGHT AND CONSERVATION AWARENESS CAMPAIGN

Utility Measures
A public announcement will be issued every April to increase customer awareness of water conservation and encourage the most efficient use of water. This announcement will include information on obtaining an electronic or paper copy of this Plan. A copy of the current public announcement on water conservation awareness shall be kept on file available for inspection by the TCEQ.

Voluntary Water Conservation
Water customers are encouraged to practice water conservation.

STAGE II - VOLUNTARY WATER USE RESTRICTIONS

Stage II is designed to encourage customers to conserve water during periods when water supplies are unusually limited. Stage 2 will begin when:

Supply-Based Triggers
- City of Houston initiates voluntary water restrictions.

Demand- or Capacity-Based Triggers
- **Total daily demand – 65% of safe pumping capacity for three (3) consecutive days.**

Upon initiation and termination of Stage II, notify all customers by placing notice on:
- **City's web site**
- **Press release to radio, television and newspapers**
- **Send Notice to all telephone customers and registered users in the area through the Code Red telephone notice system**

Conservation Goal for STAGE II
The goal for this Stage is to reduce the overall daily consumption to below 60% of the safe pumping capacity.

Requirements for termination
Stage II of the Plan may end when all of the conditions listed as triggering events have ceased to exist for a period of ten (10) consecutive days, AND the Conservation Goal for STAGE II has been achieved for a period of 10 (10) consecutive days.

Utility Measures
☐Visually inspect lines and repair leaks on a daily basis.

Voluntary Water Use Restrictions
☐Voluntary Restricted Hours: Outside watering is allowed daily, and encouraged to water only during the hours between 10:00 PM and 5:00 AM.

STAGE III - MODERATE WATER USE RESTRICTIONS

Stage III is designed to take affirmative steps to control the use of water in response to a period of significant water shortage. Stage 3 will begin when:

Supply-Based Triggers
- Equipment outage reduces well capacity by 50% or purchased water intake is limited to

less than 75% of standard average draw rates.

Demand- or Capacity-Based Triggers

- Total daily demand - 70% of pumping capacity for three (3) consecutive days.

Upon initiation and termination of Stage III, notify all customers by placing notice on:

- **City's web site**
- **Press release to radio, television and newspapers**
- **Send Notice to all telephone customers and registered users in the area through the Code Red telephone notice system**

Conservation Goal for STAGE III

The goal for this Stage is to reduce the overall daily consumption to below 65% of the safe pumping capacity.

Requirements for termination

Stage III of the Plan may end when all of the conditions listed as triggering events have ceased to exist for a period of fifteen (15) consecutive days AND the Conservation Goal for STAGE III has been achieved for fifteen days. Upon termination of Stage 3, Stage II may be effective.

Utility Measures

- Visually inspect lines and repair leaks on a daily basis.
- Water line flushing is prohibited except for dead end mains or identified quality control issues

Mandatory Water Use Restrictions (STAGE III)

The following water use restrictions shall apply to all customers:

- Outside watering is allowed daily, but only during the hours between 10:00 PM and 5:00 AM.
- Watering of plants and landscaping shall be allowed with a hand held water hose between the hours of 7:00 PM and Midnight and the hours of Midnight and 10:00 AM.
- Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is prohibited except between the hours of 7:00 PM and 10:00 a.m. Such washing, when allowed, shall be done with a hand-held bucket or a hand-held hose equipped with a positive shutoff nozzle for quick rinses. Further, such washing may be exempted from these regulations if the health, safety, and welfare of the public is contingent upon frequent vehicle cleansing, such as garbage trucks and vehicles used to transport food and perishables.
- Use of water to fill, refill, or add to any indoor or outdoor swimming pools, wading pools, or "Jacuzzi" type pools is prohibited except between the hours of 12:00 midnight and 10:00 a.m.
- Operation of any ornamental fountain or pond for aesthetic or scenic purposes is prohibited except where necessary to support aquatic life or where such fountains or ponds are equipped with a re-circulation system.
- Use of water from hydrants or flush valves shall be limited to maintaining public health, safety, and welfare.
- Use of water for the irrigation of parks, and green belt areas is prohibited except between the hours 12:00 midnight and 5:00 a.m. and between 8 p.m. and 12:00 midnight.
- The following non-commercial uses of water are defined as non-essential and are prohibited:

o Wash down of any sidewalks, walkways, driveways, parking lots, tennis courts, or other hard-surfaced areas.

- Use of water to wash down buildings or structures for purposes other than immediate fire protection

o Use of water for dust control

o Flushing gutters or permitting water to run or accumulate in any gutter or street

o Customer shall cause any leak(s) to be repaired within 72 hours after having been given notice directing the repair of such leak(s).

STAGE IV – CRITICAL WATER USE RESTRICTIONS

Stage IV is designed to take significant steps to control the use of water in response to periods of critical water shortage. Stage IV will begin when:

Supply-Based Triggers (Either condition may trigger restrictions)
- Supply contamination
- Equipment outage reduces well capacity by 50% and purchased water intake is limited to less than 75% of standard average draw rates.
- Equipment outages reduce production capacity to below 75% of normal total production.

Demand- or Capacity-Based Triggers (Either condition may trigger restrictions)
- Total daily demand as 80% of safe pumping capacity for (3) three consecutive days
- Production or distribution limitations
- System outage.

Upon initiation and termination of Stage IV, notify all customers by placing notice on:
- **City's web site**
- **Press release to radio, television and newspapers**
- **Send Notice to all telephone customers and registered users in the area through the Code Red telephone notice system**

Conservation Goal for STAGE IV
The goal for this Stage is to reduce the overall daily consumption to below 70% of the safe pumping capacity.

Requirements for termination
Stage IV of the Plan may end when all of the conditions listed as triggering events have ceased to exist for a period of fifteen (15) consecutive days AND the Conservation Goal for STAGE III has been achieved for fifteen days. Upon termination of STAGE IV, STAGE III or STAGE II may become effective.

Operational Measures
The utility shall visually inspect lines and repair leaks on a daily basis. Water line flushing is prohibited except for identified water quality issues and only between the hours of 9:00 p.m. and 3:00 a.m. Police and Code Enforcement personnel will be asked to maintain vigilance for violations of the water restrictions.

Mandatory Water Use Restrictions (STAGE IV)

- STAGE III Mandatory Restrictions with the following more restrictive prohibitions
- ALL outdoor use of water is prohibited
- Use of water to wash any motor vehicle, motorbike, boat, trailer, airplane or other vehicle is absolutely prohibited

APPENDIX 1

WATER CONSERVATION & DROUGHT MANAGEMENT INFORMATION SOURCES

Texas Water Development Board
P.O. Box 13231
1700 N. Congress Ave.
Austin,Texas 78711-3231
(512) 463 7847 voice
(512) 4752053 fax
www.twdb.state.tx.us

Texas Commission on Environmental Quality
P.O. Box 13087
Austin,Texas 78711-3087
(512) 239 1000
www.tceq.state.tx.us

Water Resource Center
U.S. EPA
Mail Code RC-41 00
401 M Street, S.W.
Washington, D.C. 20460
Telephone: (202) 260-7786
Fax: (202) 260-0386
e-mail: waterpubs@epamail.epa.gov
www.epa.gov/ow

American Water Works Association
6666 West Quincy Ave.
Denver Co 80235
(303) 794 7711
www.awwa.org

APPENDIX B

WATER CONSERVATION TIPS

Suggestions on ways to save water which may be included in public information are listed below.

A. Bathroom

a. Take a shower instead of filling the tub and taking a bath. Showers usually use less water than tub baths.
b. Install a low-flow shower head which restricts the quantity of flow at 60 psi to no more than 3.0 gallons per minute.
c. Take short showers and install a cutoff valve or turn the water off while soaping and back on again only to rinse.
d. Do not use hot water when cold will do. Water and energy can be saved by washing hands with soap and cold water; hot water should only be added when hands are especially dirty.
e. Reduce the level of the water being used in a bath tub by one or two inches if a shower is not available.
f. Turn water off when brushing teeth until it is time to rinse.
g. Do not let water run when washing hands. Instead, hands should be wet, and water should be turned off while soaping and scrubbing and turned on again to rinse. A cutoff valve may also be installed on the faucet.
h. Shampoo hair in the shower. Shampooing in the shower takes only a little more water than is used to shampoo hair during a bath and much less than shampooing and bathing separately.
i. Hold hot water in the basin when shaving instead of letting the faucet continue to run.
j. Test toilets for leaks. To test for a leak, a few drops of food coloring can be added to the water in the tank. The toilet should not be flushed. The customer can then watch to see if the coloring appears in the bowl within a few minutes. If it does, the fixture needs adjustment or repair.
k. Use a toilet tank displacement device. A one-gallon plastic milk bottle can be filled with stones or with water, recapped, and placed in the toilet tank. This will reduce the amount of water in the tank but still provide enough for flushing. (Bricks, which some people use for this purpose, are not recommended, sincethey crumble eventually and could damage the working mechanism. Displacement devices should never be used with new low-volume flush toilets.
l. Install faucet aerators to reduce water consumption.
m. Never use the toilet to dispose of cleaning tissues, cigarette butts, or other trash. This can waste a great deal of water and also places an unnecessary load on the wastewater treatment plant.
n. Install a new low-volume toilet that uses 1.6 gallons or less per flush when building a new home or remodeling a bathroom.

B. Kitchen

a. Use a pan of water (or place a stopper in the sink) for rinsing pots and pans and cooking implements when cooking rather than turning on the water faucet each time a rinse is needed.
b. Never run the dishwasher without a full load. In addition to saving water, expensive detergent will last longer and a significant energy saving will appear on the utility bill.
c. Use the sink disposal sparingly, and never use it for just a few scraps.
d. Keep a container of drinking water in the refrigerator. Running water from the tap until it is cool is wasteful. Better still, both water and energy can be saved by keeping cold

water in a picnic jug on a kitchen counter to avoid opening the refrigerator door frequently

e. Use a small pan of cold water when cleaning vegetables rather than letting the faucet run.
f. Use only a little water in the pot and put a lid on it for cooking most food. Not only does this method save water, but food is more nutritious since vitamins and minerals are not poured down the drain with the extra cooking water.
g. Use a pan of water for rinsing when hand-washing dishes rather than running the faucet.
h. Always keep water conservation in mind, and think of other ways to save in the kitchen. Small kitchen savings from not making too much coffee or letting ice cubes melt in a sink can add up over a year's time.

C. Laundry

a. Wash only a full load when using an automatic washing machine (32 to 59) gallons are required per load).
b. Use the lowest water level setting on the washing machine for light loads whenever possible.
c. Use cold water as often as possible to save energy and to conserve the hot water for uses which cold water cannot serve. (This is also better for clothing made of today's synthetic fabrics.)

D. Appliances and Plumbing

a. Check water requirements of various models and brands when considering purchasing any new appliance that uses water. Some use less water than others.
b. Check all water connections and faucets for leaks. A slow drip can waste as much as 170 gallons of water EACH DAY, and can add as much as $10.00 per month to the water bill.
c. Learn to replace washers so that drips can be corrected promptly. It is easy to do, costs very little, and can represent a substantial amount saved in plumbing and water bills.
d. Check for water leakage you may be unaware of, such as a leak between the water meter and the house. To check, all indoor and outdoor faucets should be turned off, and the water meter should be checked. It it continues to run or turn, a leak probably exists and needs to be located.
e. Insulate all hot water pipes to avoid the delays (and wasted water) experienced while waiting for the water to turn hot.
f. Be sure the hot water heater thermostat is not set too high. Extremely hot settings waste water and energy because the water often has to be cooled with cold water before it can be used.
g. Use a moisture meter to determine when house plants need water. More plants die from over-watering than from being on the dry side.

E. Out-of-Doors Use

a. Water lawns between the hours of 8:00 pm to 6:00 am during the hotter summer months. Much of the water used on the lawn can simply evaporate between the sprinkler and the grass.
b. Use a sprinkler that produces large drops of water, rather than a fine mist, to avoid evaporation.
c. Turn soaker hoses so the holes are on the bottom to avoid evaporation.
d. Water slowly for better absorption, and never water in high winds.
e. Forget about watering the streets, walks, and driveways. They will never grow a thing.

f. Condition the soil with compost before planting grass or flower beds so that water will soak in rather than run off.
g. Fertilize lawns at least twice a year for root stimulation. Grass with a good root system makes better use of less water.
h. Learn to know when grass needs watering. If it has turned a dull gray-green or if footprints remain visible, it is time to water.
i. Do not water too frequently. Too much water can overload the soil so that air cannot get to the roots and can encourage plant diseases.
j. Do not over-water. Soil can absorb only so much moisture and the rest simply runs off. A timer will help, and either a kitchen timer or an alarm clock will do. An inch and one-half of water applied once a week will keep most Texas grasses alive and healthy.
k. Operate automatic sprinkler systems only when the demand on the town's water supply is lowest. Set the system to operate between 4 and 6 am.
l. Do not scalp lawns when mowing during hot weather. Taller grass holds moisture better. Rather, grass should be cut fairly often, so that only 1 to 2 inches is trimmed off. A better looking lawn will result.
m. Use a watering can or hand water with the hose in small areas of the lawn that need more frequent waterlng (those near walks or drlveways or ln especlally hot, sunny spots).
n. Learn what types of grass, shrubbery, and plants do best in the area and in which parts of the lawn, and then plant accordingly. If one has a heavily shaded yard, no amount of water will make roses bloom. In especially dry sections of the state, attractive arrangements of plants that are adapted to arid or semi-arid climates should be chosen.
o. Consider decorating areas of the lawn with rocks, gravel, wood chips, or other materials now available that require no water at all.
p. Do not "sweep" walks and driveways with the hose. Use a broom or rake instead.
q. Use a bucket of soapy water and use the hose only for rinsing when washing the car.